PURDUE
U N I V E R S I T Y

DEPARTMENT OF BIOCHEMISTRY

BCHM 46500 – Biochemistry of Life Processes
CRN: 62827

Syllabus
Spring, 2026

COURSE DESCRIPTION AND INFORMATION

Instructional Modality: Face-to-Face
Course credit hours: 2 credits
Pre-requisites: BCHM 462

Course Description: Major questions in biochemistry and contemporary approaches to these problems. Material covered in class will primarily be derived from primary literature. Students will continue to develop the skills needed to critically read, evaluate, and assimilate the primary scientific literature.

Course Objectives:
- The overall objective of this course is to appreciate basic biochemistry concepts covered in previous courses through analysis of biochemistry research literature, with an emphasis on critical thinking.

- In addition, students will learn how to keep abreast of current research using primary literature.

- The specific objectives of the course are to have students develop a working familiarity with the process of developing testable hypotheses, the ability to assess the strengths and weaknesses of a variety of approaches used to test hypotheses, the ability to succinctly ask pertinent questions regarding a topic of interest, and the ability to assess the robustness of a variety of sources of information.

- Students in this class will be expected to develop the ability to critically read primary literature, identify and understand the hypotheses being tested, understand and critically evaluate the experiments designed to address these hypotheses, and build visual models that reflect their understanding of a literature topic.

Learning Outcomes:
- BCHM 465 students will understand the molecular principles of life based on the core disciplines of biology, chemistry and physics.

- BCHM 465 students will understand the scientific method.

- BCHM 465 students will acquire information literacy: the ability to locate, evaluate, and utilize information in the disciplines of biochemistry and molecular biology that is required for research, data analysis, and communication.

- BCHM 465 students will appreciate the ethical issues facing professionals in the life sciences.

- BCHM 465 students will understand the contributions of our discipline to society, including improvements to medicine, agriculture, the economy and the environment.

Learning Resources, Technology & Texts

Textbook: The Stryer Biochemistry textbook from BCHM 36100 and 46200 may occasionally serve as a general reference. Other reading materials will be provided electronically through Brightspace.

Brightspace: All required files will be posted on the course Brightspace page: https://purdue.brightspace.com. This includes the course syllabus, any lecture slides presented, assignments, and reading material.

Computers: Personal computers or cell phones should be brought to class to access material, including in-class assignments and quizzes. However, use of cell phones or computers for anything not course-related will result in a 25% deduction in the course participation grade.

ASSIGNMENTS AND ASSESSMENTS

Exams are cumulative.

The grading for this course will be as follows:

Exam I	200 points
Exam II	200 points
Class participation	100 points
Quizzes and Assignments	200 points
Group presentation	100 points
Final	200 points
TOTAL	**1000 points**

Class participation consists of several components, including contribution to class and small group discussions as well as contributions to in-class activities and group assignments. Class participation will be assessed and recorded by the TA and instructor. Quizzes and Assignments will consist of both unannounced in-class short quizzes and individual assignments, as well as take-home assignments/quizzes assigned through Brightspace.

Total points will be converted into a percentage and grades assigned using the standard scale below:

92-100% -   A
90-91% -   A-
88-89% -   B+

82-87% -   B
80-81% -   B-
78-79% -   C+
72-77% -   C
70-71% -   C-
60-69% -   D
<60% -   F

Missing a presentation or exam will result in a grade of 0 being recorded unless documented justification for the absence is presented. Any request to be excused from a class or exam should include official documentation whenever possible (doctor's note, request from academic advisor, interview invitation, etc.) explaining why the class/exam was or will be missed. Makeup tests will be scheduled in consultation with the instructor.

If you have any disagreements with the way your exam or assignment has been graded, please consult the grading key first, then contact the TA. If necessary, the TA will request the professorl to step in to resolve any disputes.

Requests for re-grades must be submitted no later than the end of the second class period after the graded test or assignment has been returned.

HOMEWORK ASSIGNMENTS

You are expected to complete all reading assignments before class on the due date. An electronic copy of each writing assignment is due by midnight the day before class to Brightspace. Due dates and times will be clearly indicated for all assignments and quizzes in Brightspace.

EXTRA CREDIT

There will be no opportunity for extra credit.

OBTAINING EXTRA HELP

The TA or the professor will be available to answer your questions immediately after class or by appointment (arranged in class or by e-mail). Alternatively, you can submit questions by e-mail that can be answered in class or by return e-mail.

CLASS ATTENDANCE AND PARTICIPATION

In accordance with University policy, you are expected to attend every scheduled class. If you have a valid reason for missing class such as a University-sponsored activity, job or professional school interview, religious observances, illness, or family emergency, the instructor or TA will assist you in obtaining information and materials you may have missed. Students who skip class without a valid excuse should not expect the instructor or TA to supply class notes or provide special help.

Group discussion is a critical component of this class. Consequently, both tardies and absences will be recorded. Students that are more than 5 minutes late to class will be marked as tardy. Students that are more than 10 minutes late to class will be marked as absent. Three tardies will count as an unexcused absence. Further, students using electronics to access content not related to class will be marked as tardy or absent at instructor's or TA's discretion. Two unexcused absences will result in 25% reduction in the total semester participation score. Three absences will result in 50% reduction in the participation score. Greater than three unexcused absences will result in a failing grade for the course. Whether absences will be considered "excused" will be consistent with "general Purdue guidance" described below. Please contact

the instructor if you have any questions/concerns regarding an absence that you feel is not addressed by the guidance provided below.

General Purdue guidance
This course follows the [University Academic Regulations regarding class attendance](#), which state that students are expected to be present for every meeting of the classes in which they are enrolled. Attendance will be taken at the beginning of each class and lateness will be noted. When conflicts or absences can be anticipated, such as for many University-sponsored activities and religious observations, you should inform the instructor of the situation as far in advance as possible. For job and professional school interviews it is expected that you do everything possible to avoid class conflicts, but if this is not possible, these are excused absences provide you supply the instructor/TA with documentation of the interview time and date. For unanticipated or emergency absences when advance notification is not possible, contact the instructor as soon as possible by email or phone. For absences that do not fall under excused absence regulations (see below), this course follows the following procedures:

1. Do not come to class if you are feeling ill, but DO email the instructor, with the subject line: BCHM 465 absence. I do not need details about your symptoms. Just let me know you are feeling ill and cannot come to class. If it is an emergency situation, please follow the University regulations on emergent medical care (see below).

2. Unless it falls under the University excused absence regulations (see below), any work due should be submitted on time via our course Brightspace.

3. If that day's class involves assessed work such as a test or presentation, you and the instructor will plan if and how you can make up the work, following the assignment guidelines. In general makeup work must be done within a week of the absence unless otherwise arranged with the instructor.

4. The most important consideration in any absence is how it will affect your achievement of the assignment objectives and the course learning outcomes. For cases that fall under excused absence regulations, you or your representative should contact or go to the [Office of the Dean of Students (ODOS)](#) website to complete appropriate forms for instructor notification (or contact by phone at 765-494-1747). Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent medical care. The processes are detailed, so plan ahead. Brightspace also includes a link to the Dean of Students under 'University Polices and Statements'.

PROTECT PURDUE

Any student who has substantial reason to believe that another person is threatening the safety of others by not complying with Protect Purdue protocols is encouraged to report the behavior to and discuss the next steps with their instructor. Students also have the option of reporting the behavior to the [Office of Student Rights and Responsibilities](#). See also the Violent Behavior Policy under University Resources in Brightspace.

GUIDANCE ON ACCEPTABLE USE OF AI IN THIS COURSE

The promise of AI in enhancing learning and research is vast, but it must be used judiciously. Responsible use not only ensures academic honesty but also maximizes genuine learning and skill development. Students are urged to approach AI as a supplementary tool, not a replacement for their unique intellectual capacities and insights.

Students will sometimes be given the option of using artificial intelligence (AI) language models, such as ChatGPT, in this course. This option will be explicitly declared for each homework assignment, in-class assignment, and quiz. If permission is not explicitly granted to use one or more AI tools for an assignment, then AI use is prohibited. There will be no use of AI allowed during exams.

Students who are found to have used AI for an assignment for which use of AI has been excluded in this course will be deemed to be in violation of the academic integrity expectations for this course. Violations can include a failing grade on the assignment in question or a failing grade for the course. All suspected incidents of academic dishonesty will also be referred to the Office of Student Rights and Responsibilities for further review of the student's status with the University as described below.

Acceptable Uses: Students should feel free to use AI tools, along with other resources, to help understand the content of primary literature papers they read during this course. This includes understanding the basis for experimental methods they encounter but are not familiar with, defining unfamiliar terminology, or summarizing past cited work that is required for comprehension.

Prohibited Uses: Students may not use AI to help produce any answers to assignment questions or to directly interpret any part of the assigned research articles. In general, student may not use AI tools in a way that involves uploading the assigned papers for analysis or interpretation.

ACADEMIC MISCONDUCT

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on the Academic Resources table on your Brightspace homepage.

Any incidence of academic misconduct will be reported to the Office of the Dean of Students. Academic misconduct may result in disciplinary sanctions including expulsion, suspension, probated suspension, disciplinary probation, and/or educational sanctions. In addition, such misconduct will result in punitive grading such as:
  • receiving a lower or failing grade on the assignment, or
  • assessing a lower or failing grade for the course
Punitive grading decisions will be made after consultation with the Office of the Dean of Students. Please note reported incidences of academic misconduct go on record for reference by other instructors. Further, a record of academic misconduct is likely to influence how current/future situations are handled.

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one's own"

Any plagiarism on writing assignments will results in a grade of 0. Plagiarism will be assessed using the Turnitin originality checker available in Brightspace.

Important Note on Course Materials: All materials used in this course are subject to copyright protection. Distribution of any course material to any persons or entity other than registered course participants is strictly prohibited without written permission from the instructor.

NON-DISCRIMINATION POLICY

Purdue University is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her potential. A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in the Academic Resources table on your Brightspace homepage.

ANTI-HARASSMENT POLICY

Purdue University is committed to maintaining an environment that recognizes the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding and mutual respect; and encourages its members to strive to reach their potential. The most effective way to work toward preventing Harassment is through education that emphasizes respect for every individual.

Harassment in the workplace or the educational environment is unacceptable conduct and will not be tolerated. Purdue University is committed to maintaining an educational and work climate for faculty, staff and students that is positive and free from all forms of Harassment. This policy addresses Harassment in all forms, including Harassment toward individuals with legally protected status for reasons of race, gender, religion, color, age, national origin or ancestry, genetic information or disability and Harassment toward individuals for other reasons such as sexual orientation, gender identity, gender expression, marital status or parental status. Full details of Purdue's anti-harassment policy can be found here: http://www.purdue.edu/policies/ethics/iiic1.html

The Vice President for Ethics & Compliance website includes a list of Student Policies. Among those is the Violent Behavior policy, which explains that Purdue is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent behavior impedes such goals. Therefore, violent

behavior is prohibited in or on any University facility or while participating in any university activity.

MENTAL HEALTH

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try Therapy Assistance Online (TAO), a web and app-based mental health resource available courtesy of Purdue Counseling and Psychological Services (CAPS)**.** TAO is available to all students at any time by creating an account on the TAO Connect website, or downloading the app from the App Store or Google Play. It offers free, confidential well-being resources through a self-guided program informed by psychotherapy research and strategies that may aid in overcoming anxiety, depression and other concerns. It provides accessible and effective resources including short videos, brief exercises, and self-reflection tools.
If you need support and information about options and resources, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8 a.m.- 5 p.m.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions in West Lafayette with a Purdue Wellness Coach at RecWell. Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS offices in West Lafayette

ACCESSIBILITY AND ACCOMODATIONS

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

Every member of our course should be able to access, use, and learn from the materials we share. This includes all course-related digital content that you and I share in the course. This approach helps promote equal access for everyone at Purdue and is mandated federally by Title II of the Americans with Disabilities Act (ADA). We will work together to provide this access within our Brightspace course.
- My part, as instructor, is to make sure all course materials shared to Brightspace, such as documents, slides, videos and audio, and images, meet accessibility guidelines and to assist you in making sure anything you share is accessible.
- Your role, as a student, is to make sure anything you post for other students to engage with is also accessible, such as peer grading, peer feedback, and discussion board

posts. This expectation is built into all course assignments that require you to post to Brightspace.
- A good starting place for you is to bookmark and review the [Innovative Learning Accessibility Checklist](#) for guidance on creating accessible materials.
- When selecting materials to share on our Brightspace from Purdue Libraries catalog or databases, best practices include choosing items that:
  - Can be downloaded in full
  - Are available in EPUB or HTML formats
  - Include alternative text for written materials or captions for audio/visual content

If the Disability Resource Center (DRC) has determined reasonable accommodations that you would like to utilize in my class, you must release your Course Accommodation Letter to me. Instructions on sharing your Course Accommodation Letter can be found by visiting: [How To Use Your Course Accommodation Letter](#). Additionally, you are strongly encouraged to contact me as soon as possible to discuss implementation of your accommodation.

The instructor will arrange to provide test accommodation for those who have them as a part of their DRC Course Accommodation Letter (CAL). It is imperative that students release their CALs to the instructor as soon as they are available so that arrangements can be made well in advance of exams. We may be unable to implement test accommodations if we do not have access to your CAL.

BASIC NEEDS SECURITY

If you are facing challenges securing basic needs such as food, housing, transportation, health services, or access to technology or childcare resources and believe this may affect your performance in the course, please contact the Office of the Dean of Students (ODOS) to help coordinate with [community resources](#). These services vary by location. In **West Lafayette**, see the [Basic Needs Program](#) website, or email basicneeds@purdue.edu.

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis. See Purdue's Information on [Emergency Preparation and Planning](#). This website covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System. I encourage you to download and review the *[Emergency Preparedness for Classrooms document](#)*.
The first day of class, I will review the **Emergency Preparedness plan for our specific classroom**. Please make note of items like:
- The location to where we will proceed after evacuating the building if we hear a fire alarm.

- The location of our Shelter in Place in the event of a tornado warning.
- The location of our Shelter in Place in the event of an active threat such as a shooting.

ON-LINE COURSE EVALUATIONS

During the last two weeks of the semester, you will be provided an opportunity to evaluate this course and your instructor(s). You will also be asked to provide an evaluation of the TA. Near the end of the semester you will receive an official email from evaluation administrators with a link to the online evaluation site. You will have two weeks to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. You are strongly urged to participate in the evaluation system. Your feedback will help improve the course for future students.

DISCLAIMER

This syllabus is subject to change. Changes will be brought to your attention as far ahead of time as possible.

LECTURE/LAB TOPIC SCHEDULE

Topic	Topic
Introduction and Overview/ Types of science publications	Popular press vs Primary literature Literature searching
The Scientific Method in Practice Framework for reading primary literature	Important Research Concepts Drawing models
Paper 1 (CRISPR)	Paper 1 (CRISPR)
Paper 1 (CRISPR)	Paper 1 (CRISPR)
Paper 2	Paper 2
Exam 1 (through Paper 1)	Paper 2
Paper 2	Paper 3
Review of Exam 1/Paper 3	Paper 3
Paper 3	Paper 4
Paper 4	Paper 4
Paper 4	**Exam 2 (Papers 2-3)**
Paper 5	Paper 5
Paper 5	Group Presentations
Group Presentations	Group Presentations
Dead week - Movie Time	Review for Final

FINAL EXAM – Papers 4-5 and general concepts